AGE AND GEOCHEMISTRY OF THE CHARLESTOWN GROUP, IRELAND: IMPLICATIONS FOR THE GRAMPIAN-TACONIC OROGENY AND REGIONAL MINERAL POTENTIAL

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During the early Paleozoic closure of the Iapetus Ocean, diverse sets of arc terranes, oceanic tracts, and ribbon-shaped micro continental blocks were accreted to the passive continental margin of Laurentia during the Grampian-Taconic orogeny. In the northern Appalachians in central Newfoundland, Canada, three distinct phases of arc-ophiolite accretion have been recognized. All three episodes of this accretion have now been recognized from modern studies in the British and Irish Caledonides and links to major mineralization events have been established. Here we extend the analysis of the Irish Caledonides to the Charlestown Group, located geographically between the well-studied Grampian terranes of South Mayo and Tyrone. At Charlestown, new age dating better constrains the evolution of the Charlestown Group and excludes any relationship to the syn-collisional stage of the Lough Nafooey arc system of South Mayo and instead links events to part of the younger Tyrone arc system located to the east. The implication for mineralization potential of the region can then be discussed.